

VERUS ENGINEERING

Rear Diffuser – VB Subaru WRX Install Manual



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Document Revisions

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01	2023/11/16	C. Warner	Initial release of install manual.

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VB Subaru WRX Rear Diffuser Installation

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VB Subaru WRX Rear Diffuser Installation

1. Introduction

1.1. Overview: Detailed instructions on installing the Verus Engineering functional Rear Diffuser on the VB Subaru WRX.

1.2. Difficulty: Beginner

1.3. Time Required: 1-1.5 hours

1.4. Tools Needed:

- 1.4.1. Drill
- 1.4.2. Impact
- 1.4.3. 3/8" Drill Bit
- 1.4.4. Pry Bar
- 1.4.5. Ratchet
- 1.4.6. 4mm Allen Wrench or Socket
- 1.4.7. 5mm Allen Wrench or Socket
- 1.4.8. Flat Head Screwdriver or Panel Popper Tool
- 1.4.9. Bubble or Electronic Level
- 1.4.10. 9/16" Wrench
- 1.4.11. 10mm Wrench
- 1.4.12. 12mm Socket
- 1.4.13. Sharpie

**1.5. Rear Diffuser Components:**

- 1.5.1. Rear Diffuser
- 1.5.2. (2) Side Strake
- 1.5.3. (1) Left Sway Bar Bracket
- 1.5.4. (1) Right Sway Bar Bracket

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- 1.5.5. (1) Left Side Bracket
- 1.5.6. (1) Right Side Bracket
- 1.5.7. (1) Rear Curved Bracket
- 1.5.8. (2) Small Rear Bracket
- 1.5.9. (1) Hardware Bag
 - 1.5.9.1. (12) M6x1.0 Button Head Cap Screw (BHCS) x 16mm Long, SS
 - 1.5.9.2. (9) M6x1.0 Button Head Cap Screw (BHCS) x 20mm Long, SS
 - 1.5.9.3. (27) M6x1.0 18mm OD Fender Washer, SS
 - 1.5.9.4. (13) M6x1.0 Serrated Flanged Nuts, SS
 - 1.5.9.5. (1) M6x1.0 Rivet Nut Install Tool
 - 1.5.9.6. (1) M6x1.0 Socket Head Cap Screw (SHCS) x 35mm Long, SS
 - 1.5.9.7. (4) M6x1.0 Heavy Duty Rivet Nut, Zinc Coated Steel
 - 1.5.9.8. (8) M6x1.0 Plastic Rivet Nut, Steel
 - 1.5.9.9. (4) M6x1.0 BHCS x 40mm Long, SS
 - 1.5.9.10. (3) M6x1.0 BHCS x 45mm Long, SS
 - 1.5.9.11. (3) M6x1.0 BHCS x 60mm Long, SS
 - 1.5.9.12. (6) M6 7.5mm Long Nylon Spacer
 - 1.5.9.13. (6) M6 10mm Long Nylon Spacer
 - 1.5.9.14. (6) M6 15mm Long Nylon Spacer



2. Rear Diffuser Install

2.1. Verus Engineering is not responsible for damage to you or your vehicle by following this manual and/or installing Verus Engineering products on your vehicle.

2.2. We begin by jacking the car up on a level surface. Use of wheel chocks is suggested to keep the front wheels from rolling. Using a lift is also a possibility.

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- 2.3.** First, we will start by removing the rear mufflers from the exhaust hangers as shown below. Do so on both sides.

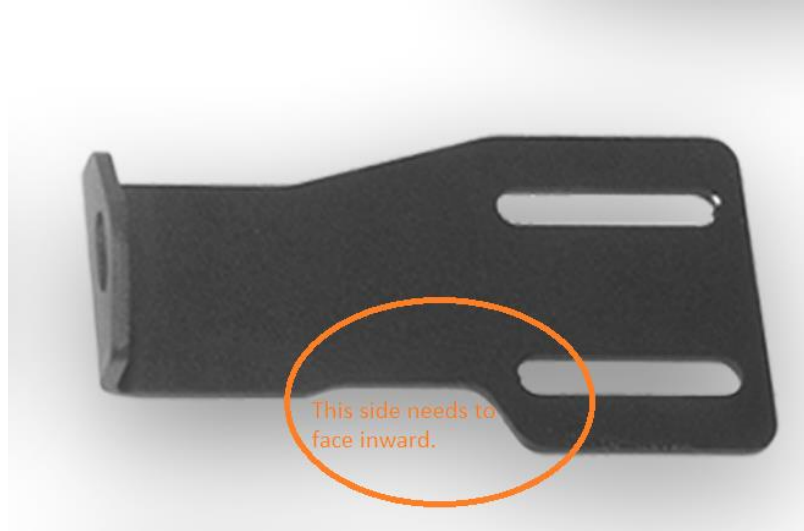


- 2.4.** Using your impact and 12mm socket, remove the rearmost sway bar bolt on each side of the car.



- 2.5.** Install both sway bar brackets as shown below. Ensure the cutout side of the bracket is facing inward. The bracket goes on the bottom side of the factory sway bar mount and the OEM hardware is reused. Torque these bolts to 13 ft lbs.

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- 2.6.** Remove the three push clips holding the plastic bumper support to the bumper cover using a flathead screwdriver or panel popping tool. Do so for both sides of the car.

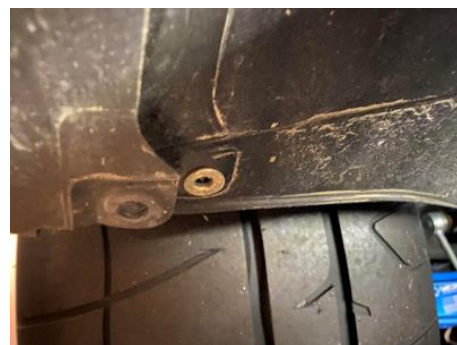


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- 2.7. Using your drill and a 3/8" drill bit, open up the holes where the three clips were just removed if necessary.
- 2.8. Install the three plastic rivet nuts into the holes in the plastic bumper support as shown below. Notice how the rivet nuts are installed **behind/above** the bumper cover in the below images. You will need to pull the bumper cover away slightly for the rivet nut install. If the rivet nuts are installed on the bumper cover, then you will have to drill out the rivet nuts anytime you need to remove the bumper. This is not recommended.



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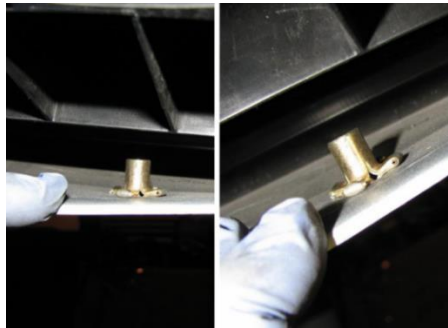
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- 2.9.** To properly install the rivet nut, you will want to thread the rivet nut onto the tool as shown below, and place the rivet nut into the hole.



- 2.10.** Using the 9/16" wrench and the 5mm Allen wrench, hold the nut steady and tighten the Allen bolt. You will have some initial resistance, then the rivet nut will begin to pull tighter on the material.

- 2.11.** Below are pictures of a properly installed rivet nut.



- 2.12.** After the rivet nuts are installed, put the bumper cover back into place.

- 2.13.** Loosely install the side brackets as shown below. Only install the bolts hand tight as we will be removing this bracket after marking the hole we need to drill.



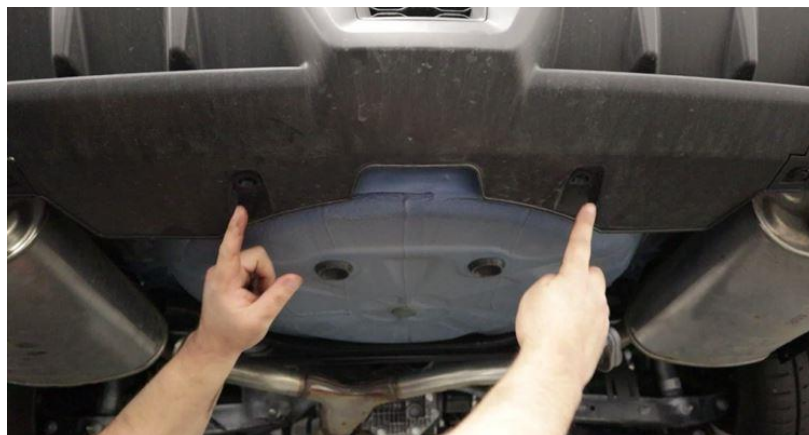
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- 2.14.** Once the side brackets are loosely installed, mark the hole on each side shown below in the bumper support.



- 2.15.** Once the holes on both sides have been marked, remove the side brackets.
- 2.16.** Drill the holes you just marked and install the rivet nuts the same way we did earlier.
- 2.17.** Once the rivet nuts are installed, bolt the side brackets to the car using a total of eight 16mm long BHCS and eight 18mm OD washers.
- 2.18.** Reinstall the exhaust. Adding a small amount of WD40 to the exhaust hanger will help them slide on easily.
- 2.19.** Remove the two pop clips that are pointed to below.

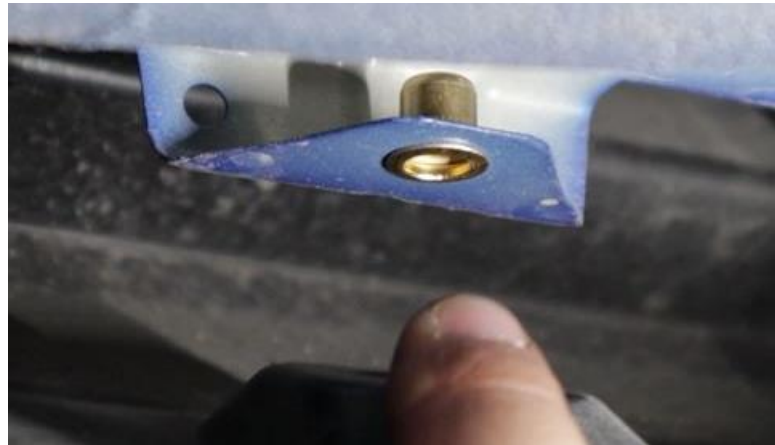


- 2.20.** Behind the bumper cover in each of these locations, there is a small metal tang. We need to install the heavy-duty rivet nuts into. Again, do not install the rivet nuts into the

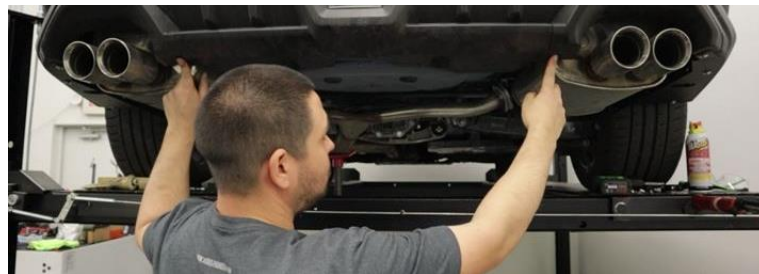
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bumper cover or you will have to drill them out anytime you need to remove the bumper cover. Below is a photo for reference. You will need to push/pull the bumper cover rearward to reach these metal tangs. The rivet nuts are slightly different than the ones used earlier, the same install principals apply.



- 2.21.** Remove the pop clips and install another set of rivet nuts in the locations pointing to below. Same install guidelines apply for the rivet nuts.



- 2.22.** Grab the rear curved bracket, a total of two 40mm bolts, four 18mm OD washer, and two 15mm spacer and pre-assemble the bracket hardware as shown below. Do this on both sides of the bracket. (Bolt > washer > bracket > spacer > washer)



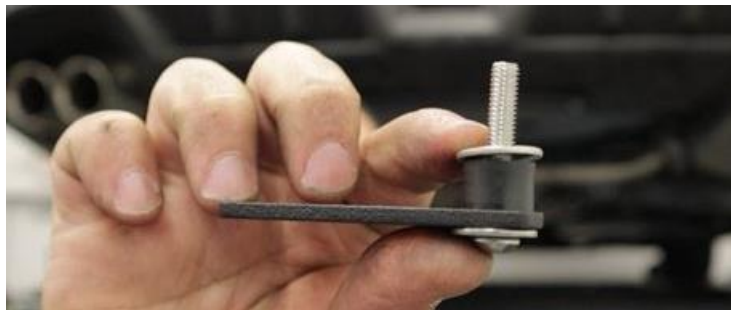
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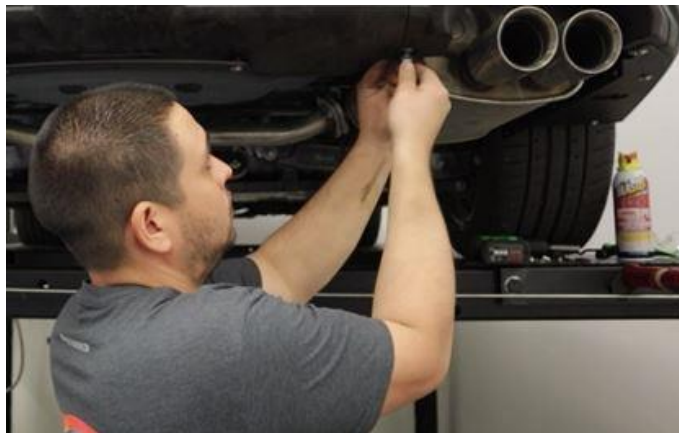
- 2.23.** Install the curved bracket into the centermost rivet nuts, as shown below. Only install these bolts hand tight for now as we may need to adjust for fitment reasons later on in the install. **Note: The curved part should be facing rearward.**



- 2.24.** Assemble both small rear brackets as shown below using a 35mm BHCS, two washers, and a 10mm spacer. (Bolt > washer > bracket > spacer > washer) **Note: These brackets have a hole and slot. Install the bolt through the hole side. We will use the slotted side later on.**



- 2.25.** Install the two small rear brackets hand tight in the outermost rivet nut locations as shown below. The slotted side should be facing rearward.



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- 2.26.** With the help of a buddy, we can now install the main diffuser panel. We will start in the front and install it to the sway bar brackets using four 16mm BHCS, four 18mm OD washers, and four serrated nuts. Leave these bolts hand tight for the time being.
- 2.27.** Next, we need to install the side strakes before we bolt the diffuser to the side brackets. Slide the side strakes between the rear diffuser and side brackets as shown below. Using a total of six 16mm BHCS, six 18mm OD washers, and six serrated nuts, loosely bolt the rear diffuser and side brackets together. We like the bolt heads to be facing outward.



- 2.28.** Now we need to figure out the height to install the rear diffuser at. This will take time and will be different for every install. Start by adjusting the frontmost location first. Once the desired height is achieved in the front, go ahead and tighten the sway bar bracket bolts to 6 ft-lbs. **Note: You do not want the exhaust touching the rear diffuser anywhere. We like to account for 5mm of clearance so the exhaust has a little room to bounce on the exhaust hangers.**
- 2.29.** Once the desired height is achieved in the front, adjust the rear and determine the number of spacers needed to level the diffuser and keep it from touching the exhaust. Using three 60mm BHCS, three 18mm OD washers, your assortment of spacers, and three serrated nuts, install the rear diffuser in the final three locations. (Bolt > washer > rear diffuser > spacers > bracket > serrated nut) **Note: You want the strakes to be parallel with the ground. Use a bubble level or angle finder against the bottom of the strake to determine the correct height.**
- 2.30.** Once everything is loosely installed and level, you can now torque all bolts to 6 ft-lbs.

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- 2.31.** Congratulations, you have successfully installed the Verus Engineering Rear Diffuser! You can now benefit from an increase in rear end downforce and a reduction in vehicle drag among other benefits.
- 2.32.** Please contact Verus Engineering with any feedback, concerns, and questions via e-mail, sales@verus-engineering.com.



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